REMARKS

In the July 14, 2003 Amendment, the Examiner noted that claims 1-11 were pending in the application and rejected claims 1-11 under 35 U.S.C. § 102(a) as anticipated by U.S. Patent 5,831,853 to Bobrow et al. Claims 1-11 remain in the case. The Examiner's rejections are traversed below.

The rejections set forth on pages 2 and 3 of the July 14, 2003 Office Action are identical to the rejections in the December 20, 2002 Office Action, with the exception of citations to portions of Bobrow et al. in the paraphrase of the preamble of claim 1 at the beginning of the paragraph spanning pages 2 and 3 and the addition of 4 lines in column 5 of Bobrow et al. cited on the first line of page 3.

In the Response to Arguments section on pages 3-5 of the July 14, 2003 Office Action, it was noted that Bobrow et al. discloses "identifying undesirable states of the subsystem wherein the undesirable states are those which will result in damage to the subsystem; and driving the system from any of the states of the system toward the desired state" (Office Action, page 4, lines 6-8), citing column 2, lines 18-64 and column 5, lines 37-58 of Bobrow et al. It was also noted that Bobrow et al. disclosed using "the identified desired state and identified undesired states, a program is generated ... [to drive] the system from any state towards the desired state, avoiding the undesired states" (page 4, lines 10-12). Finally, it was asserted that the words "error" or "errors" are synonymous in the art with "mistake, miss, problem, damage, fault, failure, undesired" (Office Action, page 4, lines 14-15).

While there may be circumstances in which the words quoted in the preceding sentence are synonymous with "error", these words are not synonymous in all circumstances, including in the art of controlling devices using a finite state machine. Claims 2 and 3 which depend from claim 1 recite specific types of errors, i.e., "all possible errors of sensors and/or actuators" (claim 2, line 2) and "failure probabilities ... allocated to the sensors and/or actuators" (claim 3, lines 1-2). The Office Action asserts that column 2, lines 41-50 of Bobrow et al. discloses "a method for computer-supported error analysis ... of at least one of sensors ... and actuators" (Office Action, page 4, lines 16-17). The cited portion is part of the Summary of the Invention section of Bobrow et al., describing aspects of the invention, and states that "the automatically generated program operates to avoid entering undesired states ... the internal transitions are controllable by the constructed controller ... [and] diagnostic information regarding possible failures of the system are obtainable." It is submitted that only the last phrase contains any reference to the

type of errors or failure probabilities recited in claims 2 and 3. The term "undesirable states" is commonly used in the programming arts to refer to conditions that are to be avoided. While some of these conditions might be caused by an error or a failure of a component, the term is much to broad to suggest to one of ordinary skill in the art that the "undesired states" that are to be avoided are caused by the types of errors and failures recited in claims 2 and 3. States that are "undesired" or suboptimal and may be uneconomical, cause excessive wear, etc. without any "error" on the part of the sensors or actuators.

The only reference to "failure" in the Description of the Preferred Embodiment section of Bobrow et al., is providing "diagnostic information for possible failures" in the last paragraph of column 7 and "Diagnostic-tree generation" in column 9, lines 23-30. The paragraph in column 7 describes the diagnostic capability as an embodiment "implemented with some inference capabilities to determine whether the system is broken and, if so, what component may be at fault ... [using] an extended description allowing an elaboration of the finite state machine" (column 7, lines 61-66). The additional details in column 9 describe using "a model of components, their interconnection, and their correct (and possibly faulty) behavior -- perhaps with other information such as prior probabilities for failure ... to construct off-line repair-action procedures" (column 9, lines 23-27). It is submitted that there is nothing in these paragraphs, or anything else that has been cited or found in Bobrow et al. suggesting implementation "for **all possible errors** of sensors and/or actuators" (claim 2, line 2) or that "failure probabilities are allocated to the sensors and/or actuators" (claim 3, lines 1-2). Rather, these portions of Bobrow et al., which describe what is summarized at column 2, lines 47-49, indicate that what is taught by Bobrow et al. is generating diagnostic information based on performance, rather than "determining a finite state description of the technical system for an error case of an error of at least one of a sensor and an actuator" (claim 1, lines 5-6). For the above reasons, it is submitted that at least claims 2 and 3 patentably distinguish over Bobrow et al.

In addition to reciting use of error and failure information in a different way than is taught by Bobrow et al., the independent claims have been amended to clarify that the finite state description is used in a way that is not taught by Bobrow et al. As previously recited, the independent claims implied that the finite state description was used in determining the first and second sets of achievable statuses (which has been changed to "states"), since the finite state description was determined in the first operation recited. Now, the independent claims have been amended to explicitly recite that the sets of achievable states are determined "using the

finite state description" (e.g., claim 1, line 8) determined in the first operation "for an error case of an error for at least one of a sensor and an actuator" (e.g., claim 1, lines 5-6).

The method taught by Bobrow et al. does not disclose taking errors of sensors or actuators into account in developing a finite state description used to determine a first set of achievable states for a system without errors and a second set of achievable states for system having an error, but rather generating a single model that defines desired and undesired states (not necessarily caused by sensor or actuator errors) and optionally using that model to develop diagnostic service manuals based on operational history. In fact, no suggestion of determining any "second set of achievable states for system" (claim 1, line 7) has been cited or found in Bobrow et al. For the above reasons, it is submitted that claims 1-11 patentably distinguish over Bobrow et al.

In addition, claim 4 recites that "method steps b) and c) ensue according to a method of model checking" (claim 4, lines 1-2). No method of model checking using two sets of achievable states, one containing an error, has been cited or found in Bobrow et al. Therefore, it is submitted that claim 4 further patentably distinguishes over Bobrow et al.

Summary

It is submitted that Bobrow et al. does not teach or suggest the features of the present claimed invention. Thus, it is submitted that claims 1-11 are in a condition for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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